GOVERNMENT OF INDIA
SCIENCE AND TECHNOLOGY
LOK SABHA

STARRED QUESTION NO:427
ANSWERED ON:17.04.2001
GENES FOR PATENTING
CHANDRA NATH SINGH

Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether the Department of Bio-Technology has identified genes for patenting; and

(b) if so, the details thereof ?

Answer

MINISTER OF SCIENCE AND TECHNOLOGY (PROF. MURLI MANOHAR JOSHI)

(a) & (b) : A statement is laid on the Table of the House.

STATEMENT IN RESPECT OF LOK SABHA STARRED QUESTION NO. 427 TO BE ANSWERED ON 17.04.2001-REGAF GENES FOR PATENTING.

(a) & (b) : Yes, Sir; Many genes have been isolated, identified, and characterized by Indian Scientists in the area of agriculture and medical biotechnology. For some international patents have been granted.; and for others process patents have been given nationally. To illustrate this, exaqmples are as follows:

Scientists of Jawaharlal Nehru University, New Delhi have isolated, identified and cloned AmA1 gene and OXDC gene; the AmA1, a seed albumin gene, was isolated from Amaranthus hypochondriacus(Ramdana). Introduction and expression of this gene into potato led to a striking increase in the growth and production of tubers in transgenic populations and also of the total protein content with an increase in most essential amino acids. Three US patents and one Indian Patent has been granted. Oxalate Decarboxylase (OXDC) gene degrades the oxalic acid produced under nutritional stress in many crops. It has been introduced in Tomato, Cabbage, Spinach and Lathyrus (Kesari Dal) and the gene has been patented. Expression of OXDC gene in tobacco and tomato plants shows remarkable resistance to phytopathogenic fungi that utilizes oxalic acid during infestation.

Other genes for delayed fruit ripening, abiotic stress, extreme cold and salt tolerance, etc. have also been isolated and identified. Similarly, genes important for development of new vaccines and drugs have also been identified and further work is in progress. For these, the patent applications have been filed. Research work is undergoing in many laboratories and universities in the country on gene research and patenting.